

## CLAIMS

What is claimed is:

- 1     1.     A method of establishing a network resources reservation for an anticipated traffic  
2           flow along a path in a network between an anticipated source and an anticipated  
3           receiver of the traffic flow, wherein the anticipated receiver otherwise cannot  
4           facilitate establishing the network resources reservation, the method comprising  
5           the steps of:  
6           detecting an RSVP Path message associated with the anticipated receiver of the  
7                         anticipated traffic flow at a proxy node located within the path;  
8           determining whether to establish the network resources reservation;  
9           generating an RESV message to reserve network resources for the anticipated  
10                  traffic flow; and  
11          communicating the RESV message to the anticipated source of the anticipated  
12                  traffic flow.
  
- 1     2.     A method as recited in claim 1, further comprising the step of determining one or  
2           more device and traffic parameter values associated with the anticipated traffic  
3           flow, and wherein the step of generating the RESV message comprises the step of  
4           generating the RESV message based on at least one of the device and traffic  
5           parameter values.
  
- 1     3.     A method as recited in claim 1, further comprising the steps of:  
2           receiving predefined policy information;  
3           generating the RESV message based on the predefined policy information.
  
- 1     4.     A method as recited in claim 1, wherein the step of determining whether to initiate  
2           an RSVP reservation process includes the steps of:  
3           determining one or more network parameter values associated with the anticipated  
4                  traffic flow;

5 determining one or more transport parameter values associated with the  
6 anticipated traffic flow;  
7 determining next and previous hop parameter values associated with the  
8 anticipated traffic flow; and  
9 correlating at least one of the ascertained network parameter, transport parameter,  
10 next hop parameter, and previous hop parameter values with information  
11 defining a relationship between them and whether a RESV message is  
12 desired.

1 5. A method as recited in claim 4, wherein determining the network parameter values  
2 and ascertaining the transport parameter values includes the steps of determining  
3 at least one of the source and receiver IP addresses, source and receiver port  
4 numbers, and transport protocol based on values carried in objects in the RSVP  
5 Path message.

1 6. A method as recited in claim 4, wherein determining the anticipated traffic flow  
2 characteristics includes determining at least one of the rate and size of packets  
3 associated with the anticipated traffic flow.

1 7. A method as recited in claim 4, further comprising the steps of extracting one or  
2 more additional anticipated traffic flow attributes from the RSVP Path message.

1 8. A method as recited in claim 7, wherein the anticipated receiver is an IP phone,  
2 and further comprising the step of determining at least one quality of service  
3 parameter associated with the anticipated traffic flow.

1 9. A method as recited in claim 1, further comprising the steps of:  
2 communicating the RESV message along at least a subset of an anticipated path  
3 defined, at least in part, by the RSVP Path message;  
4 receiving the RSVP Path message at one or more devices along the anticipated  
5 path.

1 10. A method as recited in claim 1, wherein the step of detecting an RSVP Path  
2 message comprises the step of detecting an RSVP Path message associated with  
3 the anticipated receiver of the anticipated traffic flow at a proxy node that is  
4 logically positioned adjacent to the path.

1 11. A computer readable medium comprising one or more sequences of instructions  
2 for facilitating an RSVP reservation process, for an anticipated traffic flow  
3 anticipated to be received by an anticipated receiver that cannot facilitate an RSVP  
4 reservation process for the anticipated traffic flow, wherein when the instructions  
5 are executed by one or more processors, the instructions cause the one or more  
6 processors to carry out the steps of:  
7 detecting an RSVP Path message associated with the anticipated receiver of the  
8 anticipated traffic flow at a proxy node located within the path;  
9 determining whether to establish the network resources reservation;  
10 generating an RESV message to reserve network resources for the anticipated  
11 traffic flow; and  
12 communicating the RESV message to the anticipated source of the anticipated  
13 traffic flow.

1 12. A computer-readable medium as recited in claim 11, further comprising the step of  
2 determining one or more device and traffic parameter values associated with the  
3 anticipated traffic flow, and wherein the step of generating the RESV message  
4 comprises the step of generating the RESV message based on at least one of the  
5 device and traffic parameter values.

1 13. A computer-readable medium as recited in claim 11, further comprising the steps  
2 of:  
3 receiving predefined policy information;  
4 generating the RESV message based on the predefined policy information.

1 14. A computer-readable medium as recited in claim 11, wherein the step of  
2 determining whether to initiate an RSVP reservation process includes the steps of:  
3 determining one or more network parameter values associated with the anticipated  
4 traffic flow;  
5 determining one or more transport parameter values associated with the  
6 anticipated traffic flow;  
7 determining next and previous hop parameter values associated with the  
8 anticipated traffic flow; and  
9 correlating at least one of the ascertained network parameter, transport parameter,  
10 next hop parameter, and previous hop parameter values with information  
11 defining a relationship between them and whether a RESV message is  
12 desired.

1 15. A computer-readable medium as recited in claim 14, wherein determining the  
2 network parameter values and ascertaining the transport parameter values includes  
3 the steps of determining at least one of the source and receiver IP addresses,  
4 source and receiver port numbers, and transport protocol based on values carried  
5 in objects in the RSVP Path message.

1 16. A computer-readable medium as recited in claim 14, wherein determining the  
2 anticipated traffic flow characteristics includes determining at least one of the rate  
3 and size of packets associated with the anticipated traffic flow.

1 17. A computer-readable medium as recited in claim 14, further comprising the steps  
2 of extracting one or more additional anticipated traffic flow attributes from the  
3 RSVP Path message.

1 18. A computer-readable medium as recited in claim 17, wherein the anticipated  
2 receiver is an IP phone, and further comprising the step of determining at least one  
3 quality of service parameter associated with the anticipated traffic flow.

- 1 19. A computer-readable medium as recited in claim 11, further comprising the steps  
2 of:  
3 communicating the RESV message along at least a subset of an anticipated path  
4 defined, at least in part, by the RSVP Path message;  
5 receiving the RSVP Path message at one or more devices along the anticipated  
6 path.
- 1 20. A computer-readable medium as recited in claim 11, wherein the step of detecting  
2 an RSVP Path message comprises the step of detecting an RSVP Path message  
3 associated with the anticipated receiver of the anticipated traffic flow at a proxy  
4 node that is logically positioned adjacent to the path.
- 1 21. A system for establishing a network resources reservation for an anticipated traffic  
2 flow along a path in a network between an anticipated source and an anticipated  
3 receiver of the traffic flow, wherein the anticipated receiver otherwise cannot  
4 facilitate establishing the network resources reservation, the system comprising:  
5 means for detecting an RSVP Path message associated with the anticipated  
6 receiver of the anticipated traffic flow at a proxy node located within the  
7 path;  
8 means for determining whether to establish the network resources reservation;  
9 means for generating an RESV message to reserve network resources for the  
10 anticipated traffic flow; and  
11 means for communicating the RESV message to the anticipated source of the  
12 anticipated traffic flow.
- 1 22. A network device that can establish a network resources reservation for an  
2 anticipated traffic flow along a path in a network between an anticipated source  
3 and an anticipated receiver of the traffic flow, wherein the anticipated receiver  
4 otherwise cannot facilitate establishing the network resources reservation, the  
5 network device comprising:

6           a network interface;  
7           a processor coupled to the network interface and receiving network messages from  
8           the network through the network interface;  
9           a computer-readable medium comprising one or more stored sequences which,  
10          when executed by the processor, cause the processor to carry out the steps  
11          of:  
12          detecting an RSVP Path message associated with the anticipated receiver  
13          of the anticipated traffic flow at a proxy node located within the  
14          path;  
15          determining whether to establish the network resources reservation;  
16          generating an RESV message to reserve network resources for the  
17          anticipated traffic flow; and  
18          communicating the RESV message to the anticipated source of the  
19          anticipated traffic flow.